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Ignotus ænigmaticus Slosson.

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Ernest Swinhoe, 37 Addison Gardens, London W., England

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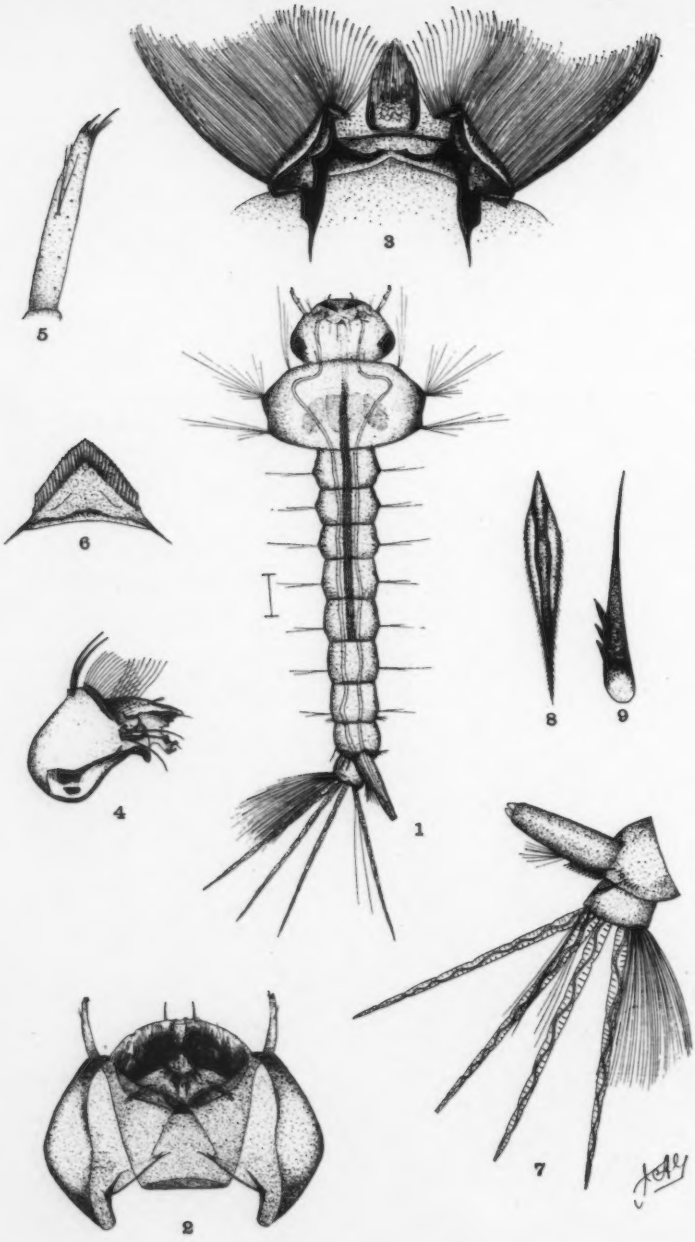

CULEX DUPREEI COQ.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XV. FEBRUARY, 1904. NO. 2.

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Notes on the Life History of Culex Dupreei Coq.

BY JOHN B. SMITH.

(With Plate VII.)

This is a small mosquito originally described from Louisiana, and it ranges in color from grayish brown to nearly black. The dorsum of the thorax is taken up by a silvery white stripe with diffuse edges, and this white is continued on the head; filling up most of the space between the eyes. It resembles *serratus* on a smaller scale; but the stripe is not so well defined and the maculation of the abdomen differs.

The species was first found in the larval stage July 29, 1903, by Mr. Clarence Van Deursen, an office assistant, in a woodland pool near New Brunswick, New Jersey. Several other species were associated with it, but this larva was at once recognized as distinct by its unusually long anal gills, the apparent absence of a breathing tube, and by its habit of remaining close

to the bottom. This is a singular character, and in confinement they have never been observed to rise voluntarily to the top, for air. When disturbed they sail rather than wriggle toward the surface; but immediately descend as soon as quiet is restored. So inconspicuous and transparent are they, that a jar containing them would be set aside as empty, unless critically examined, and this, together with their habit of hiding amongst the leaves at the bottom of the pools, renders them difficult to secure.

A number of pupæ were brought in with the larvæ July 29th, and from these came 1 ♂, July 30th, and 2 ♂, July 31st. Some specimens of the larva were preserved, others pupated and yielded adults August 2, 3 ♀; August 3, 1 ♀; August 4, 1 ♀; August 5, 1 ♂; August 6, 1 ♀. The period of the pupal stage averaged about 3 days and offers nothing abnormal.

Another collection was made in the same locality August 13th, and a mixed lot of nearly full grown larvæ and pupæ were secured. From the pupæ 1 ♁ adult emerged August 15th, and 8 ♁, August 18th; a very long period. Larvæ began to pupate August 15th, and adults were secured as follows: August 19, 5 ♂; August 20, 7 ♂ 1 ♀; August 21, 2 ♂ 1 ♀. The average duration of the pupal stage in this lot was 4 days.

September 3rd, another collection was made and larvæ were secured in an earlier stage; but these did not do well in confinement and only 1 ♁ adult was obtained, September 15th.

Full grown larvæ were again met with by Mr. John A. Grossbeck, one of my field assistants, September 9th and 10th, in woodland pools in the Great Piece Meadow, an extensive swamp area along the Passaic River in the northern part of Essex County. Pupation began at once and adults were obtained as follows: September 13, 8 ♂; September 14, 6 ♂, 3 ♀; September 15, 2 ♂, 2 ♀; September 16, 1 ♂, 6 ♀. This also gives an average duration of four days in the pupal stage.

Half grown larvæ were secured in the same place September 24th; but none were brought to maturity.

This record indicates continuous breeding from the latter part of July to the end of September, and of course it is prob-

able that the breeding began much earlier in the season and continued at least a little later. No adults were taken on the wing and no observations were made of any attempts at biting. Practically the species is of no importance: technically it is of the greatest interest.

The larva, figure 1 of plate vii, is whitish, almost transparent, and 5-6½ mm. in length. The head is almost twice as broad as long. Antennæ half as long as the head, almost uniform in thickness two-thirds from base, then tapering slightly to the tip where there are four articulated spines and a stout little joint. The hair tuft, figure 5, issues from a point slightly above the middle, and is sparse, not extending beyond the tip. At figure 2, is a drawing of the head beneath, made from a cast skin. The rotary fan tufts, figure 3, have the hairs pectinated at the tip; most obviously so toward the centre of the structures. The mandible, figure 4, and the mentum, figure 6, offer nothing of special importance.

The thorax is one and one-half times the width of the head, with the sides a little angulated: tufts as shown in the figure.

The anal siphon is 4½ times as long as its width at base and tapers rather evenly toward the tip. It is really a very inconspicuous affair in the larva and readily overlooked in the living specimen. At figure 1, its relation to the entire larva is brought out, and at figure 7, its relation to the immediate sursoundings is shown. This drawing was made from a mounted cast skin, and the tube seems in consequence stouter than is really the case. There are 12 spines in each of the lateral rows, and their average form is shown at 9.

The lateral combs of the 8th abdominal segment consist of from 8 to 10 scales each, arranged as shown at 7, and individually like figure 8 on plate.

The anal gills are more than double the length of the anal siphon, slender, drawn to a point, with the tracheal tubes readily visible through the transparent walls under low powers of the microscope.

Altogether this is a very distinct little species in all the known stages. Of the egg, or of its method of hibernation, I have no information.

Notes on Coleoptera.

By Charles Dury, Cincinnati, Ohio.

On Melasini.

I have taken here from time to time specimens of a *Nematodes* that was locally associated with *N. atropos* and *N. penetrans*. Its elytra and body beneath are black. Head and thorax reddish brown covered with golden hairs. Body shorter and stouter than *atropos*, with the thoracic foveæ round and much deeper. Antennal joints 4 and 5 short, not longer than wide. Joints 6, 7, 8, 9, 10 and 11 longer than wide. It has quite a different facies from either *atropos* or *penetrans*, and will come between them in Dr. Horn's table, given in his excellent monograph of the North American species of *Eucnemini* (Trans. Amer. Ent. Soc. 1886, p. 5.) In this paper Dr. Horn makes mention of such a species. Mr. Fleutiaux of Paris has suggested that it might be Bonvouloir's *Nematodes collaris*. After a comparison of the specimens with his (Bonv.'s) description of *collaris*, I am satisfied that it is that species. Bonvouloir gives Brazil and "La." as the localities, though mentions La. as doubtful. The three species of *Nematodes* we find here, have the same habits. They run rapidly on the trunks of dead Beech, Elm and Maple trees, hiding under the bark and in crevices. When disturbed they drop to the ground. They emerge from round holes which they cut through the wood. In his classification of this sub-family (Société Entomologique de France, LXX, 1901), Mr. Fleutiaux uses *Melasinæ* instead of *Eucneminæ*. In revised list of Coleoptera observed near Cincinnati, Ohio (Journal Cin. Soc. Nat. Hist. XX No. 3), I have enumerated twenty-five species of this sub-family, the result of over twenty-five years' collecting. I thought I had taken all the local species, but was surprised June 10, 1903, to find a large well-marked species that had hitherto escaped observation. It proved to be *Hylochares nigricornis* Say. They were cutting their way out of the trunk of a huge dead White Elm, (*Ulmus americana*) making round holes. The area of emergence was about 6 x 24 inches, and from this spot I secured 107 fine specimens. The species is well described in Horn's paper referred to, but the extreme of size in

my series is 5 to 10 mm. *Stethon pectorosus* occurred from June 28 until July 7 on dead elm. I took two specimens of *Adelothyreus dejeanii* Bonv. running on the trunk of dead Beech. *Nematodes atropos* and *penetrans* both occurred, June and July, on dead trees and logs, the former rare and the latter common. Mr. Blanchard of Tyngsboro, Mass., reminds me that in Revised List Cin. Coleop. I had overlooked the fact that *Fornax hornii* Bonv. was the other sex of *calceatus* Say, as mentioned in my former list, and the genus *Tharops* has been superseded by *Isorhipis* (See Biologia Vol. 3, pt. 1.) This makes twenty-eight species of the sub-family occurring here.

Rediscovery of a Lost Species.

While collecting insects in a Beech woods near this city June 24 to July 8, 1903, I observed a bright green chrysomelid running rapidly over the leaves of "Boneset" (*Eupatorium ageratoides.*) The beetle was very shy, taking flight quickly if approached. By rapid strokes of a butterfly net I captured 31 specimens, both males and females. An examination reveals some characters of considerable interest. I feel satisfied that the species is Say's long lost and doubted "*Galeruca dorsata*" (See Horn's *Galerucini*, Trans. Amer. Ent. Soc. xx, p. 132.) Say gives the "Arkansa above the Virdigris," as the locality of his type. The female is ¼ inch long, as given in Say's description, but the male is a little less. The color is bright green, shining. By oblique light it changes to deep blue. There is a pale border around the elytra. Say's description fits the female well. He evidently did not see the male, as he does not mention the remarkable male characters, which are, a large deep fovea with a short groove leading into it, situated near the suture, a short distance from the apex on each elytron, and a curious modification of the antennal joints 5-6 and 7 best shown in the drawing.

The species seems to be a *Diabrotica* and not *Galeruca*, and should stand as *Diabrotica dorsata* (Say.)

Notes on an Elm Leaf Case-bearer, Coleophora limosipennella (Duponchel.)

By Walter W. Hoover, Brooklyn, New York.

I met this little insect for the first time in the latter part of June, 1902, and have observed it pretty closely from time to time since then. My attention was first attracted to it by the numerous little brown patches on the leaves of the English Elms (*Ulmus campestris*) in Prospect Park, Brooklyn. An examination of the leaves revealed the fact that the patches were made by a case-bearing insect, the larva of a small moth belonging to the genus *Coleophora*. The exact species I could not determine at the time but I now believe it to be *limosipennella*.

The case-bearers were first noticed in Prospect Park about 1894 or 1895, but it is not improbable that they existed here long before that, but had not become numerous enough to attract attention. They are now found in nearly all parts of Prospect Park, and in several places in Brooklyn outside of the Park, but they occur in greatest numbers on the English Elms on what is called South Lake-Drive. While showing a decided preference for the English Elm I have found them on the American Elm, and on the Camperdown Elm. This decided preference for the English Elm leads me to believe that like the Elm-leaf Beetle, which also prefers the European Elms but has become a formidable foe to the American Elm, this case-bearer is also an importation from Europe.

The case-bearer is only about ⅛ of an inch long and the case is about ½ inch in length. The case is made from a portion of the leaf and resembles both in color and shape a diminutive cigar.

The manner of feeding is rather interesting and is somewhat as follows: The caterpillar selects a place almost invariably on the underside of the leaf usually near a vein branching from the midvein; here it fastens the case and proceeds to make a small round hole in the skin of the leaf. As soon as the epidermis is eaten through and the hole thus made is large enough to admit its head, the caterpillar begins feeding upon

the soft green tissue which fills all the space between the upper and lower skins and the large veins. Usually they eat out all the mesophyl between two parallel veins and as far as they can reach in the other two directions without entirely leaving the case. It will be remembered that the case is attached to the leaf and its door is exactly over the hole in the epidermis. Once or twice I have seen a caterpillar voluntarily leave the case altogether, but usually they keep a tight grip upon the case, and when disturbed duck back into it with surprising rapidity.

Adult moths emerged from the cases on July 19th and continued coming out for about two weeks. They are light grey in color with beautifully fringed wings. They spread a little over half an inch. I kept a number of them in my breeding cage hoping to get some eggs, but in this I was disappointed.

On July 31st I found a minute yellow speck on an elm leaf which under the microscope proved to be a mass of deeply pitted lemon yellow eggs. Since none of the eggs hatched I am not sure what they were, but as they closely resembled the eggs of another species of *Coleophora*, as described by Professor Slingerland, I am inclined to believe that they were the eggs of this species.

Although none of the eggs hatched in my cages, young case-bearers were abundant on the English Elms during the first week in August. They evidently construct their cases almost as soon as they are hatched, for I have never been able to find one without a home. The young brood do not differ materially in habits from the old. They construct their cases as neatly, and in the same manner as the spring brood did.

With the approach of Autumn I was anxious to know whether the case-bearers would fall with the leaves, as in that event they could easily be destroyed by gathering the leaves and burning them. I was lead to hope that such would be the case, since in my breeding cages they adhered tenaciously to the leaves even after they had withered and become quite dry. In fact I often had to detach them from the dry leaves and place them upon the fresh food in order to keep them alive.

I found, however, that by the middle of September, several weeks before the leaves dropped, the case-bearers were already firmly attached to the stem. Clustered around the bud at the base of the petiole of the leaf upon which they had lived, they passed the winter, ready to begin work upon the unfolding leaf which the first warm days of Spring should bring out. Thus they passed the Winter not as pupæ but as hibernating larvæ.

With the advent of Spring the caterpillars begin to feed upon the unfolding leaves. Soon they feel the need of larger quarters, but instead of building an addition to the old case, each caterpillar makes a new case. The case-bearer selects a place near the edge of the leaf and usually near the base, attaches its case and begins to make a burrow in the soft green tissue just as it normally would in feeding except that it does not eat out so large an area as it ordinarily would, but simply makes a burrow large enough to accommodate itself comfortably and enough more to allow for growth. It then weaves a silken web all around the interior of the burrow except at the hole where it entered, which is left as the mouth of the case, and a narrow slit at the opposite end which serves as a back door for the exit of excrement. The new case is still attached to the leaf, but in a day or two it becomes dry and brittle, and the wriggling of the caterpillar causes it to break away from the rest of the leaf, and soon the caterpillar walks off carrying his case with him.

The life of the case-bearer during the next few weeks may be briefly described as spent in eating, resting quietly suspended on the under surface of a leaf, and in seeking a new place to feed. It is a curious sight to see one of these little insects moving along a leaf with its case held out at a right angle with the surface of the leaf upon which it is moving; it reminds one of a very small Bag-worm, *Thyridopteryx ephemeræformis*.

By the first week in July the larvæ pupate, remaining in the pupa condition about two weeks, and the adult moths emerge about the middle of July.

Mr. Jay Elmer Brown died in February, 1903. He was an ardent collector of Lepidoptera and resided at Pasadena, California.

An Unusual Injury by the Snowy Tree-cricket and Notes on its Feeding Habits.

By C. O. Houghton, Newark, Del.

On May 28th, 1903, there was brought to the Station for examination the trunk of a young plum tree, something over an inch in diameter, which contained a great many small, round punctures scattered irregularly over nearly the entire surface. Surrounding some of these punctures were irregular depressed areas in the bark of considerable size and in some cases a considerable amount of a gummy substance had exuded from the wounds, entirely covering the apertures.

I had seen nothing of the kind before, and an examination of the literature at hand on the subject of insects affecting the plum and other fruit trees threw no light upon the matter. Examination of the punctures revealed in each the presence of a small elongate egg, or egg-case, set in obliquely with one end near the opening and wholly contained within the bark or very nearly so. I was not familiar with the eggs and the trunk was left upon a table in the laboratory to await further examination. While working in the laboratory that evening I chanced to see, running quite rapidly about on the surface of the bark, three orthopterous nymphs, slender-bodied, light in color and about a half an inch in length, including the antennæ, which were considerably longer than the body. A fourth one had not wholly freed itself from the egg-case, being still held by the antennæ and one of its legs. This left no doubt in my mind as to whether or not the others had emerged from some of the other punctures in the bark. I at once came to the conclusion that these active little fellows were the young of a species of tree-cricket and began to look up the literature on the subject. I found plenty of references to these insects and their injuries, but nothing that was at all comparable with the case in hand until I came to a bulletin by Dr. Hopkins,* while connected with the West Virginia Agricultural Experiment Station, in which he gives some notes on *Oecanthus* sp. injuring branches of apple trees in old orchards. His experiences, up to the point of finding the eggs, were very similar to

* Bull. 50 W. Va. Agri. Expt. Station, p. 39 et seq.

my own, but as he had not seen the young, or been able to more than guess at the identity of the species, I was naturally anxious to bring the young crickets to maturity and thus establish the identity of the author of this peculiar injury. Accordingly I captured the four specimens, placed them in shell vials and carefully examined the trunk for more, but without success. Thinking that more might emerge during the night and not having anything at hand large enough to enclose the whole trunk of the tree, I tried the experiment of suspending it at some distance from the floor by means of a piece of fine wire fastened to it near the middle. I thought the young crickets would probably be too timid to jump from the trunk, but in this I was mistaken, if any emerged, (as was quite probable) for I found none upon it on the following morning. I soon found that the young crickets jumped readily and considerable distances shortly after emerging from the egg-cases.

Having a supply of aphides, principally from cherry trees, in the laboratory, I placed from two to six of them in the vials with the young crickets, and out of six which I put in one vial with a cricket but one was alive the following morning. On the 29th, I sawed the trunk into pieces about a foot in length and put them inside a glass cylinder, covered with cheese cloth, in order to secure any other crickets that might emerge. On the following morning I found five more young crickets, one of which was held by the hind legs in much the same manner as the one previously described. This one never succeeded in freeing itself and soon died. Doubtless this would have been the fate of the first one had I not helped to free it from its egg-case, and as it was it died later, within 24 hours and never was able to move about much. The other four were bright and active, and when resting usually sought light colored places, as a point where a limb had been cut off or the sawed end of one of the pieces, evidently realizing the protection afforded by such places.

When but a day old one of the crickets killed two good sized aphides and apparently sucked the juices from them, in a period of five or six minutes.

May 31st being Sunday I did not visit the laboratory, but on the morning of June 1st I found twelve or fifteen more crickets in the cylinder. Most of these were resting on the cheese cloth over the top of the cylinder.

Between June 1st and 8th about a half dozen more crickets emerged, but none were found in the cylinder after the latter date. Apparently the last specimen emerged on the night of the 7th. Thus the time of hatching had extended over a period of eleven or twelve days with me, but I estimated that probably one-half the young had emerged before the tree trunk had been brought into the laboratory.

A few of the young crickets died, probably more from lack of food than from any other cause, but on June 9th I had about twenty-three in good condition, most of them in shell vials, usually but one in a vial. On that day I noted the first case of cannibalism. An empty shell vial had been placed in a glass cylinder in which a few of the crickets were inclosed, and two of them had fallen into it. They had not been there long, but one—the larger—had killed and partly devoured the other. One or two other cases of cannibalism were noticed later, but only when there was a scarcity of food.

As was to be expected, feeding was done principally at night or in the evening, and they kept comparatively quiet during the day, but if very hungry and they were given fresh food they would usually feed at any time. After a night's feasting the slender-bodied active insects would be transformed into sluggish creatures with greatly distended abdomens.

As they grew older they apparently became accustomed to being handled, and exhibited but little signs of fear when being changed from vial to vial or when having their food supply replenished. Occasionally one would jump, and the distance to which it would leap and the suddenness of the movement would cause me to wonder that they did not all escape from captivity at some time or other.

They were always very cleanly in their habits, and it was quite amusing to see them cleaning their long antennæ by slowly drawing them through their mouth parts or to see them reach their heads back under their bodies in their efforts to

remove, by means of their mouth, any particles of dirt that might have become attached thereto.

On June 12th I left Newark for a month's vacation at my home in northern New York, and took my entire colony of twenty odd crickets along with me. They were placed singly in shell vials holding about six drams, tightly corked, and a number of aphides, with a little vegetation, were enclosed with each.

Up to this time they had been fed principally on aphides from cherry and peach trees, but with a change in section of country a change in food was necessary, and during their month's stay in northern New York their food consisted almost entirely of the currant aphis.

I soon found that the shell vials were too small for my captives, as some lost their lives by becoming fastened by their long antennæ to the sides of the vials, apparently rendered sticky by the moisture from the vegetation enclosed, and the honey-dew from the aphides. Accordingly the survivors were transferred to jelly tumblers turned bottom upwards over pieces of paper; usually but one was placed in a jar, as I feared more cases of cannibalism. I was not able to watch them very closely, so could not get any very definite molts, but the first sign of wings appeared on an individual in which one of the moults occurred on July 4th. The wings appeared at that time as little pads in which state they remained for a considerable length of time. The skin cast by this individual at this time was only partially eaten, I think.

On July 8th I left home for Newark, and at that time had but seven living crickets. The plant-lice on the currant bushes having at this time practically disappeared, I found it necessary to look for other food for them on their trip back to their native State, and found this in the shape of some large plant-lice on rose bushes.

These seemed to "fill the bill," and all of the crickets reached Newark safely. There the food question was a greater problem than at Potsdam, for it was next to impossible to find plant lice of any kind. I succeeded in finding a few colonies on young pear trees, but these were soon gone, and I was

forced to look elsewhere. A garden weed yielded a very few large lice of a species not previously fed to them, and these were eaten like the others. It was not long however, before I found it impossible to find even these, and I began to despair of ever bringing any of the crickets to maturity. On July 20th I had but three left, and one of these was rather small and unpromising. With their natural food supply exhausted I thought the case nearly hopeless. It then occurred to me that perhaps they might eat insects other than plant-lice, so I captured some specimens of *Pieris rapæ*, snipped off their wings, cut the bodies partly open and placed them in the jars with the crickets. On the following morning I found to my great satisfaction that they had been feasting upon them. Later, house flies were added to their menu, and were fed upon, and this, in one case at least, in the afternoon. On the night of July 24th, the largest one of the three specimens moulted again, and on the morning of the 25th, I found a full-grown female specimen of *Oecanthus niveus* DeGeer in the jar.

In looking over the literature on the species I had found in one of Prof. C. M. Weed's reports* while Entomologist for Ohio, the statement that *Oecanthus niveus* is carniverous when young, but "when full-grown, however, the insect becomes a vegetarian." † I had been feeding my adult specimens principally upon a diet of flies, but thinking that possibly a vegetable diet might be preferred, I placed in the jar one night several kinds of young and tender leaves and a single house fly. The leaves were small and were carefully examined, so that had any part of them been eaten I could have easily detected it. On the following morning only the wings of the fly remained; the leaves were untouched. This specimen lived until August 4th, and so far as I could ascertain no vegetable matter was ever eaten though various kinds of leaves were placed in the jar with her.

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*7th Ann. Rept. Ohio Agric. Expt. Station p. 155.

† It is but fair to Prof. Weed, however, to add that in his "Insects and Insecticides," published soon after this Report, he states that these insects "feed upon plant-lice and other insects during their entire existence."

Notes on some Orthoptera from British Columbia.

By A. N. Caudell, Washington, D. C.

The collecting trip to British Columbia made this Summer by Dr. Dyar, Mr. Currie and myself, while generally successful, was a dismal failure orthopterologically so far as actual number of species taken are concerned. Less than one hundred specimens were collected and over a third of these were *Melanoplus atlanis*. This widely distributed species occurred rather commonly in the valleys visited; but its congener, *M. femur-rubrum*, was not often met with in the vicinity of Kaslo, where most of our collecting was done. *M. dawsoni* var. *tellustris* and *M. fasciatus* were also taken, but in limited numbers. The former was raised from nymphs collected above the snow banks back of Bear Lake at an altitude of about 6500 feet on July 29th, the adults issuing on August 12th. *M. fasciatus* was taken at Mirror Lake, a small lake a couple of miles below Kaslo, on July 17th.

Besides *Melanoplus atlanis* but one grasshopper occurred in any considerable number, *Circotettix suffusus*. The first mature specimen of this was taken at Kaslo on July 13th. One specimen belonging to this genus was referable to Kirby's species *verruculatus*. These two species are very nearly related and will very probably prove to be forms of the same species.

Camnula pellucida, often so injuriously common in some localities, was seen but twice, a mature female being taken at Kaslo on August 5th, and a nymph on June 24th.

Of grouse-locusts three species were taken, *Tettix granulatus*, *T. crassus* and *T. brunneri*. *Brunneri* occurred in both the macropterous and the brachypterous form. I owe its determination to Dr. J. L. Hancock who will later describe the long winged form, which he writes me is new. *Crassus* has previously been reported only from Michigan, Nebraska, Colorado and New Mexico. The single specimen taken by us agrees with authentic specimens of this species identified by Hancock.

I take this opportunity of expressing my perfect inability to use Dr. Hancock's synoptic tables. They seem carefully prepared, yet the dichotomous method is not consistently pur-

sued. It is to be greatly hoped that Dr. Hancock will, in a promised supplement to his otherwise valuable monograph, revise his tables and present them in the ordinary form.

Among the rarer species of Orthoptera taken by us in British Columbia may be mentioned *Podisma polita* and *Ceuthophilus henshawi.* The former was taken on the Kitchener Glacier on Mt. Kokanee on August 10th. *C. henshawi* was taken in numbers at sugar at Kaslo during the months of June, July and August. They came out after dark, and after eating of the mixture of beer, rum, molasses and sugar until they were stupid, fell an easy prey. These "drunken ceuthops," as Mr. Curris and I facetiously nicknamed them, were so numerous at sugar that several dozens might have been taken in one evening. Though so much in evidence at night I saw few during the day time, in fact I saw no more than half a dozen specimens during the many days of diligent search spent in that region. This remarkable species seems worthy of generic distinction.

Cyphoderris monstrosa was also a much prized capture. An immature, but almost full grown, female specimen of this rather interesting species was found by Dr. Dyar at Ainsworth. It was found floundering about in a wagon track on a damp mountain trail. This specimen agrees with the adult, a specimen of which was kindly presented by Dr. Fletcher, except that the wing pads are still smaller and the pronotum does not extend back so far over the basal segment of the abdomen. This immature specimen was taken on July 10th, and the adult given me by Dr. Fletcher, was taken at Banff, Alberta, on August 8th.

Cockroaches thrive in British Columbia as they do almost everywhere. The common species there seems to be the German roach or croton bug, *Blattella germanica.* They are in every thing, even the food. On this trip I had them served to me in three different styles, alive in strawberries. a la carte with fried fish and baked in biscuit. In justice to our amiable host of the Kaslo Hotel, where we stayed most of the time, be it said that these little appreciated delicacies were not served at his table.

Wisconsin Bees: Genus Andrena.

By S. Graenicher, Milwaukee, Wis.

The three species described below bring the number of new species of *Andrena* from Milwaukee County, Wis., up to seventeen. My sincere thanks are due to Prof. T. D. A. Cockerell for the interest taken in the study of these bees, as also for the very liberal aid given me in various ways.

Andrena fragariana n. sp.

♀.—Length about 6 mm. Black. Pubescence whitish, thin, and of moderate length. Head broad, distinctly striate below the ocelli. Facial foveæ narrow, extending below the base of the antennæ, and containing light-brown pubescence. Cheeks narrow. Clypeus slightly convex, shining, with sparse, shallow punctures. No median impunctate line. The pubescence is short and sparse on the clypeus, longer on the cheeks and sides of the face. Process of labrum short, semicircular. Flagellum somewhat testaceous beneath. Joints 4 and 5 subequal, both together about as long as 3. Mandibles reddish at the tips. Mesonotum dull, finely roughened, with shallow, hardly visible punctures. Pleura and sides of metathorax clothed with long white hairs, while those of the mesonotum are rather short and thin. Enclosure of metathorax moderately broad, defined by impressed lines, coarsely roughened throughout. The sculpture of the surrounding area is much finer. Wings yellowish hyaline, stigma and nervures testaceous. Second submarginal cell more than one-half as long as third, receiving the first recurrent nervure at or slightly before the middle. Tegulæ testaceous exteriorly, of a darker shade than the stigma. Legs black, with short white hairs. Tibial scopa also white. The small joints of the tarsi are somewhat ferruginous. On the inner side the basal joints are covered with light yellowish pubescence. Abdomen shining, broad and flattened, with poorly developed apical hair-bands, and narrowly testaceous apical margins. Upper surface of segments minutely tessellate, without punctures. Anal fimbria inclined to fulvous.

♂.—About 5 mm. long. Very closely resembling the female. Pubescence more cinereous than in the other sex, also longer and more dense on clypeus, cheeks, pleura, and sides of metathorax. Cheeks regularly rounded. Joint 3 of antennæ about as long as 4 + 5. Second submarginal cell narrower than in the female, and apical margins of abdominal segments more distinctly testaceous.

Milwaukee, Wis., 10 ♂ and 16 ♀ specimens, collected from May 15 to June 15, 1903, on the flowers of our commonest wild strawberry, *Fragaria virginiana* This bee is an oligotropic visitor of these flowers, and has not been observed on the flowers of any other plant.

The female might be mistaken for that of *Opandrena ziziæ*, but the facial fovea is much narrower, the metathoracic enclosure narrower, but more coarsely sculptured, and the anal fimbria considerably lighter than in *O. ziziæ*. Besides, the latter has a greenish reflection, which is especially noticeable on the scutellum and postscutellum of local specimens, and it is a somewhat larger insect. *A. fragariana* is the smallest species of *Andrena* sens. lat. occurring in our locality. The male of this species, with its black clypeus, is at once separated from the white-faced male of *O. ziziæ*.

Andrena wheeleri n. sp.

♀.—Length 8 mm. Body black, covered with thin, whitish-yellow pubescence, except on mesonotum, scutellum and postscutellum, where it becomes distinctly ochraceous. Head as broad as thorax, with extremely broad facial foveæ. The pubescence of the latter light ochraceous, when viewed from the side or from above. Front below the ocelli minutely striato-punctate. Vertex and cheeks finely roughened, impunctate. The pubescence is moderately long on sides of face, vertex, and cheeks, short and scanty on the clypeus. The latter is somewhat shining, with an impunctate area in the middle. Punctures on the sides of the clypeus small and crowded, becoming large and sparse towards the middle. Process of labrum rounded. Joint 3 of antennæ equal to 4+5. Flagellum clavate, reddish beneath towards the tip. Mesonotum and scutellum faintly shining, with sparse, small, shallow punctures. On the mesonotum the hairs are erect, short and scattered, while those of the scutellum and postscutellum are rather long and brightly colored. Metathoracic enclosure broad, roughened, rugose at the base, with impressed smooth lines at lateral borders. Surrounding surface more finely roughened. Wings hyaline, with a yellowish tint. Nervures, stigma and tegulæ testaceous, the latter dark brown anteriorly. First recurrent nervure entering the second submarginal cell at the middle. the latter nearly quadrate, about half as long as third. Legs dark brown, inclining to testaceous on the posterior tibiæ and tarsi. Yellowish pubescence of the legs nowhere abundant. Abdomen broad oval, shining, bare, without a trace of hair-bands. Segments 2, 3 and 4 depressed more than one-third. Depressions impunctate, the remaining parts with very small, not close punctures. Anal fimbria fulvous.

♂.—Length 7 mm. Pubescence more uniformly whitish-yellow throughout than in the female, and longer on clypeus, cheeks, and mesonotum. Cheeks regularly rounded. Joint 3 of antennæ considerably shorter than 4+5, hardly longer than 5. Nervures and stigma darker, and apical depressions of abdominal segments narrower than in female, less than one-third the length of the segment.

Milwaukee, Wis., 3 ♂ and 13 ♀ specimens, taken on the flowers of *Tænidia* (*Zizia*) *integerrima* and *Thaspium trifoliatum aureum*, from June 8 to June 18, 1903. This is undoubtedly an oligotropic bee of the *Umbelliferæ*. It is named in honor of Prof. Wm. M. Wheeler, who, within the last few years, has contributed so largely to our knowledge of North American ants.

Andrena persimilis n. sp.

♀.—Length about 9 mm. Black, with dirty white pubescence on head and thorax, and grayish-white hair-bands on the abdomen. Facial foveæ moderately broad, covered with light pubescence. Clypeus shining, with small and close punctures, and a narrow impunctate median line. Process of labrum truncate. Cheeks considerably swollen, shining, thinly pubescent. Flagellum rufo-testaceous beneath near the apex. Pubescence of thorax long and thin, partly concealing the surface. Disc of mesonotum and scutellum highly polished, with very minute punctures; metathoracic enclosure defined by impressed lines. Its surface, as also that of the surrounding parts, dull and rather smooth. Legs dark brown, with white hairs, those on the inner surface of the basal joints of hind tarsi yellowish. Tibial scopa dense, plumose. Wings clear white, with dark nervures. Tegulæ and stigma testaceous, the latter less than half as wide as the marginal cell. Third submarginal cell shorter than the first, but nearly three times as broad as the second, which is hardly narrowed above, and receives the first recurrent nervure behind the middle. Abdomen shining, flattened, broad and oval, without punctures. Continuous broad hair-bands of white appressed pubescence on segments 2 to 4. Anal fimbria dirty-white, with a reddish tint.

Milwaukee, Wis., one female, taken August 24, 1903, collecting pollen on the flowers of *Solidago canadensis*. The structure of the tibial scopa places this species in the genus *Pterandrena* Rob. In many respects it answers the description of *A. distans* Prov., but differs as follows: wings distinctly clear, stigma pale testaceous, not ferruginous, second submarginal cell hardly narrowed above, and abdominal hair-bands composed of short, appressed pubescence (long in *distans*).

Andrena parnassiæ Ckll.

Andrena parnassiæ, Cockerell, Ann. and Mag. Nat. Hist., 7, IX, 105. ♀, ♀.—The females are mostly larger than the type, some of them reaching a length of nearly 10 mm.

♂.—Length 8 mm. Head enormously developed, much wider and higher than the thorax. Cheeks broad and shining, moderately convex,

with a rounded angle above the middle of the eye. Margin of the angle reflexed. Upper part of cheeks bare, joint 3 of antennæ longer than 4 + 5. Mandibles long, slender and distinctly curved. A distinct notch remote from the tip. Pubescence longer and more whitish than in the female, black on vertex and mesonotum only. Hair-bands of abdominal segments very poorly developed.

Milwaukee, Wis., 5 ♂, 20 ♀ specimens. This bee flies from August 25th to September 26th. The size of the head of the male is very remarkable. In this respect the male surpasses the male of any other species of *Andrena* sens. lat. known from this locality.

Andrena viburnella Graen.

Andrena viburnella, Graenicher, Can. Ent., XXV, 165. ♀.

♀. The second submarginal cell is very large, in most cases fully as long as third.

♂.—Length 8–10 mm. Pubescence lighter than in the female, dirty-white. Punctuation finer and closer. Cheeks broad, evenly rounded. Antennæ rather short, and stout for a male, joint 3 not quite as long as 4 + 5. Wings with a ferruginous tint. Nervures and stigma distinctly light ferruginous. Second submarginal cell shorter than in female, about two-thirds as long as the third on cubital nervure. In the smaller specimens the legs show hardly any ferruginous coloration at all, while in the larger ones this color is present on all the tarsi, the tips of all of the tibiæ, and the bases of the posterior tibiæ. Slightly developed hair-bands on the margins of abdominal segments 2 to 5, widely interrupted on 2 and 3.

Milwaukee, Wis., 6 ♂, 8 ♀ specimens, taken from May 29th to June 20th, on the flowers of *Viburnum lentago*, *Rubus villosus*, and *Thaspium trifoliatum aureum*.

We have received a blank renewal blank from Montreal, Canada, and wish we were mind readers. Send us your name so we can give you credit for $1.00.

White *vs.* Black Pins.—My insect room is very hot and dry, during the summer months. The high temperature has so hastened greasing of the specimens, and the formation of "green oxide" on the white pins, that I have been obliged to discard them, and use the black japanned steel pins. These have the advantage of being sharp and stiff, though they are not very smooth; however they work well in this very dry room. But while at Brownsville, Texas, during last April and May, the black pins rusted badly. I am sure a long stay in such a damp locality would ruin them.—Charles Dury.

Observations on Bembecia Marginata var. Albicoma and Sesia Acerni.

By Henry Engel, Pittsburgh, Pa.

For several seasons I have been on the lookout for *Bembecia marginata* in this vicinity, but had no success until I found part of an empty pupal shell protruding from a dead cane of red raspberry on June 28, 1903. On further examination of the cane and roots, the feeding habits were noticed, and a search for larvæ resulted in finding three in a small patch of red raspberry. From that date to July 22, nearly every day, one to two hours were devoted to hunting larvæ and pupæ of this species, resulting in the discovery of two hundred and forty specimens. These were found in a comparatively small area in a ravine having clusters of blackberry bushes here and there. Only five were found in raspberry bushes. Both sexes of the typical form and also of the var. *albicoma* occurred among the imagos resulting from the pupæ collected. Apparently the female of the variety *albicoma* was unknown when Mr. Beutenmüller concluded his Monograph of the Sesiidæ. A brief mention of its points of difference from the typical form is appended.

Bembecia marginata var. **albicoma** Hulst, ♀.

Head, thorax and abdomen sooty-black, all lines and markings on collar and thorax reduced and straw-yellow. The line which crosses and ends in a triangular patch on each side of thorax in the typical form is interrupted in *albicoma*, extending only to lateral lines above the intersection of the primaries. The rings on the first three segments are only faintly indicated on top and are narrower on the under side than in *marginata*. The tuft of hair on the dorsal part of the third segment is all black. The rings on the abdomen and last two segments are straw-yellow, with black hairs intermingled on the last two segments. The legs are clothed with brown hairs. The margins of the wings are somewhat darker brown than in *marginata*.

Ova of *marginata* were obtained. The following description has been prepared by Dr. W. J. Holland:

"*Eggs of B. marginata:* .80 mm. in length; .60 mm. in width; oblong oval viewed from above; greatly flattened on base, and flattened ovate viewed laterally; profusely covered with minute, irregular, reticulated ridges enclosing deeper pitted depressions. Deep chestnut-brown in color."

Interesting points in the habits of this species were observed. The time of day when they emerge differs from all Sesiids known to me. The males emerge from noon till 4 P.M., the females from 3 to 5 P.M. No notice was taken of this unusual behavior when two males emerged on August 8th and 14th, respectively, but when eight males and one female appeared during the afternoon of August 15th, my interest was aroused and I determined to learn their mating time. The males were bottled and the female placed in a cage and exposed all day August 16th. She remained inactive until 3 P.M., when, in a clumsy manner, she commenced flying about the cage. At nearly 5 P.M. the first male appeared, and more at short intervals until 6 P.M., when I had taken fourteen. A male was placed in the cage, and copulation took place, which lasted till 8.45 P.M. Subsequently I mated a number of pairs, but copulation never lasted more than forty-five minutes to one and one-half hours. From August 22d onward females were exposed every day, but males never appeared as early as the first day the experiment was tried.

Mr. Beutenmüller, in his Monograph, p. 226, under the heading "*Habits of Imagos*," expresses the view that *marginata* is probably nocturnal in its habits. He came close to it. In all the experiments, excepting the first day, males were attracted from 6 P.M., sometimes 6.15 P.M., till 7.20 P.M., when it was quite dusk. This, however, is as far as its habits approach the nocturnal stage. After copulation they remain inactive until the following day, when about 10 AM. several females became active and deposited a few ova on the screen of the cage. In the field I have seen only two females. These were found about 2 P.M. on September 6th, resting on leaves of hawthorn and blackberry, respectively. Mr. Zahrobsky, of Wilmerding, Pa., observed the female flying about noon depositing ova on the base of blackberry canes. About one hour after emergence the males take to the wing and must be removed from the cage, otherwise they quickly reduce their wings to fragments. The pupæ and imagos show a remarkable variation in size. The male imagos range from 17 mm. to 26 mm., the females from 26 mm. to 32 mm., with a corre-

sponding variation in the bulk of the abdomen. This, no doubt, is caused by abundance or lack of food. Taking the difference in size of the male and the female into consideration, all the larvæ found in vigorous and strong plants were of uniform size. In the district where I collected these larvæ and pupæ is a miniature mountain of coal-slack on which stunted and dwarfed bushes exist. Although the canes were scarcely thick enough for the larvæ to form their pupal cells, nearly every bush harbored a larva. All these were smaller in size. Right after the change to the pupal stage the pupæ are cream-colored, but change gradually to reddish brown in the course of two days. The larvæ and pupæ were left in sections of roots or in a part of the cane, and these were placed on damp soil in the cage, but nearly one-half of the number collected succumbed to the unnatural conditions. Some of the larvæ perhaps were not mature when carried in. From 240 in all, 129 examples emerged, as follows: 71 males and 39 females of *marginata* and 9 males and 10 females of the var. *albicoma*. There were 168 males attracted to females, of which number 29 were *albicoma*. The two forms readily interbreed. I have mated female *marginata* and male *albicoma* and vice versa. Larvæ and pupæ were collected from June 28th to July 25th. The first pupæ were found on July 2d. By July 20th the majority were in the pupal stage. The first imago emerged August 8th, with males strongly in the majority until August 25th; after that females were more numerous. The last few days of August are the height of their period of flight. Females exposed on August 29th to September 3d attracted only eleven males. Stragglers appeared in the cage up to September 12th, mostly all females. The pupal stage lasts from twenty-five to thirty days. Males attracted by females could be seen from some distance; they have a slow and hesitating flight and carry the antennæ erect when on the wing. Males of *albicoma* are readily distinguishable from *marginata* even when flying. The rings on the abdomen in newly emerged males of *albicoma* are nearly white, and contrast strongly from the deep-black abdomen; but, as in all Sesiids, the lustre of

their markings soon fades after death and leaves the colors duller.

* * * *

Concerning *Sesia acerni*, Mr. Beutenmüller, in his Monograph of the Sesiidæ, on page 296, writes: "According to Mr. Hulst, the eggs are probably laid at night. The moths emerge soon after sunrise and are on the wing a few minutes after emerging from the pupæ."

My observations on this species totally disagree with this statement, and I recount what I have observed. Occasionally we find a lonely example of this species in a woods where different species of maple grow. To find them in abundance we must seek the silver maple, *Acer dasycarpum* Ehrhart, which is extensively used as a shade tree in suburban sections of cities. In Knoxville Borough, near Pittsburgh, nearly all of the streets are lined with this maple. Here I have observed and collected *acerni* for many years. Often from 50 to 100 empty pupal shells may be seen protruding from the trunk and main branches of a single tree at the end of its period of flight. Females were collected at all hours from noon to 5 P.M. depositing ova. A female will often distribute from 10 to 15 ova on the same tree. There is nothing unusual in its time of emergence. On bright, warm days *acerni* may be found emerging from 8 to 11 A.M. The males, after their wings are developed, which, however, takes more than a few minutes, as stated above, soon fly in search of mates. The females mostly remain on the trunks of the trees till after copulation. On cloudy days very few emerge, and these may be found resting on the trees; none were seen flying on such days.

New North American Species of Scoparia Haworth.

By Harrison G. Dyar, Washington, D. C.

Scoparia normalis n. sp.

♀ Expanse 26 mm. Pale grey; a black shade at base of fore wings; t. a. line dark, slightly bent at middle, thickened on costal two-thirds by a broad black bar which absorbs orbicular and claviform; reniform fused to costa by a black shade, formed of two superposed confluent ellipses, partly filled with black; t. p. line pale, narrowly black shaded within, bent outward slightly beyond reniform; terminal space irregularly black

shaded, the shades succeeding the t. p. line on costa and inner margin and on center of outer margin; a row of black terminal points; fringe dark gray with white dashes at the ends of the veins. Hind wings soiled whitish, darkest along outer margin.

It resembles the ♂ of *centuriella* Schiff., but is very different from the ♀ of that species.

One ♀ Beulah, New Mexico, 8000 feet (T. D. A. Cockerell).

U. S. National Museum, type No. 7654.

Scoparia fernaldalis n. sp.

♂♀ expanse 14-18 mm. Very similar to *basalis* Walk. (*libella* Grt.), but rather larger, seemingly somewhat narrower winged and generally darker in color. The markings are the same, varying considerably as in *basalis*. It is perhaps a western form of *basalis*, which I take pleasure in dedicating to Professor C. H. Fernald, who examined a specimen and thought it worthy of separation from the eastern species.

188 specimens, Kaslo, B. C., Canada, 1700 feet. (Currie, Caudell, Cockle and Dyar.)

U. S. National Museum, type No. 7655.

Scoparia tricoloralis n. sp.

♂♀ expanse 19-21 mm. Light gray, shaded with black; a black patch at base of fore wing on costa; t. a. line pale, slightly oblique, bent a little at the middle, followed on costal two-thirds by a heavy black band that absorbs the orbicular and claviform; reniform small, of two superposed black spots, followed by a large, contrasted, brown cloud; t. p. line narrow, white, narrowly dark edged within, roundedly, evenly and strongly bent outward beyond the reniform; terminal space heavily black shaded, cut outwardly centrally by a diffuse pale arc, representing the subterminal line. Fringe pale, black checkered at base. Hind wings blackish shaded, subpellucid along internal margin.

Four specimens, Wellington, B. C. (Theo. Bryant), Kaslo, B. C. (Caudell, Currie and Cockle.)

U. S. National Museum, type No. 7656.

Scoparia cinereomedia n. sp,

♂♀ expanse 14.5 mm. Pale gray; basal space heavily, but not continuously shaded in black as far as the t. a. line; center of wing clear gray, the outwardly placed reniform composed of two superposed ellipses, clouded and fused to costa by black; t. p. line narrow, pale, crenulate, bent opposite reniform but not forming an arc, black edged within. Terminal space shaded in black, leaving a pale space below apex and above anal angle; terminal black spots diffuse; fringe white with a dark basal line. Hind wings grayish, subpellucid.

Two specimens, New Brighton, Pa. (H. D. Merrick.)

U. S. National Museum, type No. 7657.

Notes on Culex nigritulus.

By D. W. Coquillett.

In the autumn of 1902 specimens of a small *Culex* were received from Prof. J. B. Smith, with the statement that they were bred from larvæ living in the salt marshes of New Jersey; they agreed so well with the published descriptions of *Culex nigritulus* Zetterstedt that they were referred to that species. The recent appearance of the third volume of Theobald's Monograph of the Culicidæ, however, has thrown a grave doubt upon the correctness of this reference, since the figure which he gives of the male clasper on page 201 is very different from the same organ in our species. In the second volume of the Monograph, upon which the identification of our species was chiefly based, no mention was made of the male claspers, but in the remarks on this species near the bottom of page 141 occurs this statement: "I can detect no difference in the ♂ ungues or any important structural detail from *C. pipiens*," thus implying that the claspers are like those of the latter species, figured on page 134.

Prof. Smith assures me that repeated searching by himself and his assistants has failed to discover larvæ of our species in fresh water, it being essentially a salt-water species. Mr. Theobald tells us that the specimens of *nigritulus* treated of in the second volume of his Monograph were collected by himself "in great numbers in and over half-filled water-butts"—presumably of fresh water. The specimens upon which Zetterstedt founded his original description were from Quickjock, in the northwestern part of Sweden, within the Arctic Circle and over one hundred miles from salt water.

Thus all the facts indicate that *nigritulus* is a fresh-water species distinct from our salt-water form; the latter will, therefore, require a new name, for which *Culex salinarius* is proposed. The male is so similar to *pipiens* that, as yet, I am unable to point out any distinguishing character; the first joint of the claspers bears beyond the middle of the inner side an irregular row of about five chiefly flattened spines, while near the outer end of this row is an elongate-oval lamella.

The female is also remarkably like *pipiens*, but the cross-bands of yellowish scales on the abdomen are narrower, being scarcely apparent on the anterior segments.

The larva has been well figured by Dr. H. G. Dyar (Jour. N. Y. Ent. Soc., XI, Plate II, Figure 3); strangely enough, it has not a rounded head and robust subanal tube, as in *pipiens*, but a subquadrate head and long, slender subanal tube, as in *territans*, from which it can scarcely be distinguished except that the spinous processes on the subanal tube have three or four branches, while in *territans* they usually have a single branch.

H. G. KLAGES has disposed of his foreign collection to the Carnegie Museum, and is about to sell his North American material and give up entomology.

ANDRENINÆ (*Andrena* s. l. etc.) and *Parnopes* of North America; Philanthidæ of New Mexico and bees of the Northwest (Oregon, Washington and Vancouver); all these are being arranged systematically. Persons having specimens in these groups from the territory mentioned will add to the completeness of the work by sending their material to the writer for examination.—HENRY L. VIERECK, Connecticut Agricultural Experiment Station, New Haven, Conn.

IN THE December issue of ENTOMOLOGICAL NEWS we note with interest that "the immediate immersion of insects in gasoline in collecting" was suggested, "as they frequently injure themselves in fluttering about the collecting bottle."

How delightfully ridiculous it is that the amateur collector will go on year in and year out stuffing his sphingids and large "flies" into some sort of a death-trap poison-chamber, and cheerfully acknowledging that the specimens are "only slightly rubbed!" He knows that he must never touch these wing surfaces with his fingers, yet he persists in thrusting violently active specimens into the death chamber, knowing full well that the "dust" will fly from said wings till the last struggle is over. He knows, too, that it is no easy task to paper the remains of said specimens when extricated from said slaughterhouse; and the fact that the specimen may come to life if removed too soon is frequently too obvious.

Gasoline injection,—the only simple, safe, and sure method of killing large insects—has been described once or twice in the NEWS; but the amateur, plodding collector would not mend his ways even if extra editions of warning notices were placarded all around him.

Verily, we shall have the needlessly "slightly rubbed" specimens with us forever.—O. W. BARRETT, Mayaguez, P. R.

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form, will be given free, when they are wanted; and this should be so stated on the MS., along with the number desired. The receipt of all papers will be acknowledged.—ED.

PHILADELPHIA, PA., FEBRUARY, 1904.

It is a trite saying that there are always two sides to a story. Prof. Cockerell has called attention to errors in regard to Southwestern Geographical names, and his article is timely, but it also calls attention to an unfortunate condition of affairs. Everyone has not been in the Southwest, and everyone does not have a Spanish dictionary at his elbow. If we were to see the words *Arroga near San Ignacio, at light*, we might suspect what was meant, but would not blame the person who did not.

It would be much better when one means to refer to Lower California to use that name and not Baja California.

We are constantly having trouble in deciphering and translating names of places from which collections have been received. The celebrated collector Mr. Jones has been in New Mexico or Old Mexico. He has collected at some celebrated town, not mentioned on any map, and consisting of one street of mud-houses. Mr. Jones of course knows where Mr. Jones has been, and if the world does not know this also, it is the fault of the world. He *writes?* his labels but of course no one can read them. Another collector has visited Tuxpan and admits it, for which we feel very grateful, and look in the geography for the place and find four of them—there is nothing like being liberal. We only know things by comparison, and probably would not appreciate an honest man if there were no thieves, so when a collector goes West (or any other direction) and on his return sends you printed labels for the speci-

mens collected, you should be profoundly grateful, and as our school-boy reports say, "may he continue to deserve commendation."

Printed labels are very inexpensive and save endless bother, but if you can't get them printed, write the names of all small and doubtful places legibly.

We have analogous trouble with the names and addresses of people. Mr. *Blank* was born in Blankville, so his mother told him, and has resided on Blank street ever since that momentous event. Mr. Blank may be a man of parts, or he may not, we never met him; we have never been in Blankville, therefore never saw Blank street, but we are sure that Mr. Blank thinks we have by the way he signs his name and writes his address.

Moral—start the New Year by having printed pin labels for all your specimens and send them to your friends when you make exchanges.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

"AREN'T you glad the Christmas holidays are over?" asked the bachelor. "Glad!" snorted the father of eight, as he thought of all the stockings he had filled. "I guess I am. I'm glad I'm not the head of a family of centipedes."

THE NAME CIRIS.—I find that the name *Ciris*, Grote, Pr. Ent. Soc. Phil., 1863, applied to a genus of Noctuidæ, will have to fall because of *Ciris*, Koch, 1850, in Arachnida. The noctuid genus may be called *Xerociris*, n. n., type *Xerociris wilsoni* (Grote). In a recent part of Proc. Ent. Soc., Washington, there is a discussion concerning the circumstances under which it is proper to change a preoccupied name. I think that when the author of the original name is living he should be asked to propose the new term, unless he has shown himself regardless of such matters. At the same time I am not sure it would not be better to form committees to look after these matters in different groups, because I have found that many authors either refuse to do anything or postpone action indefinitely, when their attention is called to homonyms they have published. Would it not be possible to form a committee to examine all the generic names given to American insects with respect to homonymy, and remove from our lists all names found untenable on this account?—T. D. A. COCKERELL.

I ENCLOSE some clippings from an adv. of a "Moth Catcher" which I think are worth copying for the edification of the readers of the NEWS. How humiliated the average collector must feel when he reads that a lot of obscure and unknown persons have succeeded, without any effort on their part, in getting information about insect life, which he, notwithstanding all his study has never suspected! to think that the ichneumons sting fruit instead of caterpillars! It will doubtless be hard for the man who has raised about a million ichneumons from pupæ from which he expected some choice moths, to swallow the new idea, but he must come to it if the great *moth catcher man* says so. And to think of the great discovery that a moth makes the lice on cabbages! Surely some of our "louse specialists" must look into the matter. Now if they can tell us what kind of timber produces wood ticks, and what breed of colts can be got from horse chestnuts, and where to find mare's nests, they will oblige E. J. SMITH, Natick, Mass.

"ARROYO GRAND, CAL., Dec. 30, 1901.

This is to certify that I have used the Haseltine Moth Catchers the past summer and found it to be a perfect success. I caught CODLING MOTHS, the POTATO MOTH or FLY, and the MOTH THAT MAKES THE CABBAGE LOUSE. I had no wormy apples to speak of, although bad in 1900.—THOMAS H. KEOWN."

"RICHLAND, MO., Dec. 9, 1901.

I used one of S. A. Haseltine's Moth Catchers in my cabbage patch. I caught the white moth and kept the green worms out of my cabbage.—MAGGIE A. ELDRIDGE."

"The Ichneumon fly, which is called by the book-learned professors a friendly insect, has been seen by practical orchardists to be the guilty fellow that stings the fruit and gives it the appearance of a pepper box. It destroyed the fruit of Austria and Hungary in Europe, and stung and injured the trees. Some of them were found dead with the stings in the twigs of the trees. Col. A. Harrington of Springfield, Mo., saw this (friendly) insect stinging his fruit, and he got the Moth Catcher and cleared them out and made fine fruit. So this so-called (friend) was seen by an orchardist, A. T. Warner, of Lawrenceville, Ill., stinging his fruit and ruined its commercial value this year, 1902."

SINCE the recent fire in Wicken Sedge, when the growth of about twenty acres of the Fen, the property of Mr. G. H. Verrall, entomologist, of Newmarket, with the rare insects, etc., which find sanctuary there, was destroyed by fire, the Cambridgeshire County Police have been making diligent inquiries as to the cause of the fire, with the result that on Monday four University men from Cambridge called on Mr. Verrall and acknowledged that one of their number caused the fire by accidentally throwing down an unspent match, The sedge adjacent to the spot where it fell quickly caught fire, and, seeing what had been done,

all four of the collegians ran away. They readily acknowled they acted very foolishly in not staying and attempting to put out the fire, but said they lost their heads. All four undertook to reimburse Mr. Verrall for any loss and expense their action had entailed, and with this understanding Mr. Verrall expressed himself satisfied.—STANDARD, (London), June 17, 1903.

HERBERT H. SMITH has given up entomology and collecting and has sold his collection to the Carnegie Museum, at Pittsburgh, for three thousand dollars.

THE MINER is in receipt from an agricultural bureau, of a neat little portrait, life size, of the cotton boll weevil whose depredations in southern cotton fields bid fair to make the product of the silk-worm cheap in comparison with the "fruit of the loom." The picture represents this enemy of "King Cotton" as a rather ungraceful oblong creature, much out of proportion, with six very crooked legs and a long sword-like beak. A fierce mustache, consisting of one hair, curls sarcastically on either side its mouth, above which the eyes, somewhat resembling shoe buttons, glare defiance at the world at large. The picture has been hung in the Miner's art gallery and the cotton growers of Montana are welcome to inspect it at any time free of charge. The people of Montana cannot fail to be as appreciative of the gift as were the natives of a tropical isle for a consignment of warmingpans once bestowed upon them.—*Butte (Montana) Miner.*

ON PAGE 41 of your January number I notice a note on the distribution of *Catopsilia eubule*. Two Sundays ago I had three young boys at my house to see my collection, and they had with them two females and one male of this species which they had captured in Bridgewater, Mass. Mr. S. F. Denton, of Wellesley, has seen these, and I think he was as much surprised as I that they should have been captured in this State.—ANDREW G. WEEKS, JR.

Doings of Societies.

At a meeting of the Entomological Section of the Academy of Natural Sciences of Philadelphia, held December 17, 1903, Dr. D. M. Castle, presided, and twelve persons were present. The following gentlemen were elected to serve as officers for the present year: Director, Philip Laurent; Vice Director, H. W. Wenzel; Treasurer, E. T. Cresson; Conservator-Recorder, Henry Skinner; Secretary, Frank Haimbach. Publication Committee, J. H. Ridings, C. W. Johnson.

A meeting of the American Entomological Society was held December 17, 1903, Dr. P. P. Calvert, President, in the chair. Twelve persons were present. The report of the treasurer was read and referred for audit. Reports were read from the Curator, Secretary and Librarian. A letter was read from Mr. J. C. Bradley in regard to the loan of books on certain conditions. The matter was referred to the Executive Committee for examination and report. Mr. Ilg exhibited specimens of *Bembecia marginata* reared from blackberry by Mr. Engle. of Pittsburgh. Mr. Matthews exhibited *Ecpantheria scribonia denudata*, ♀, with a single bar on the hind wing. The following were elected officers for the year 1904:

President, Philip P. Calvert, Ph.D.; Vice-President, H. W. Wenzel; Treasurer, E. T. Cresson; Recording Secretary, Henry Skinner; Corresponding Secretary, Frank Haimbach; Librarian, J. C. Bradley.

Publication Committee, E. T. Cresson, C. Few Seiss, B. H. Smith; Executive Committee, P. Laurent, H. W. Wenzel, Frank Haimbach; Finance Committee, J. W. McAllister, C. S. Welles, D. M. Castle, M.D.

HENRY SKINNER, *Secretary.*

The January meeting of the Newark [N. J.] Entomological Society was held on January 10th, with President Keller in the chair and seventeen members present.

The resignation of Mr. W. Rienecker was read and accepted.

Mr. Bronson was elected to honorary membership.

Mr. Brehme showed a series (about twenty specimens) of *Pseudohazis eglanterima*, var. *shastænsis*, and Mr. Keller a *Hyparpax venus*, caught in Burnett County, Texas, in May.

Mr. Broadwell reported the capture of *Pseudanophora mora*, October 8th, and *Sabulodes sulphurata*, July 29th, both in Newark. OTTO BUCHHOLZ, *Secretary.*

The December meeting of the Newark Entomological Society was held on the 13th with Vice President Stortz in the chair and 11 members present.

Mr. Brehme reported as curator of lepidoptera; he com-

mented upon the small number of specimens in the Society's collection, and made the proposition that if each member would from now till March donate 10 specimens to the collection, he would present the Society with 100 specimens representing 50 species new to the collection; his report and offer were accepted.

Mr. Henry Wormsbacher, of Jersey City, was proposed for membership and unanimously elected.

OTTO BUCHHOLZ, *Secretary.*

At the meeting of the Feldman Collecting Social, held December 6, 1903, at the residence of Mr. H. W. Wenzel, 1523 South 13th Street, Philadelphia, eight members were present.

Mr. Bland exhibited some Coleoptera collected in September around English Creek, N. J. He also showed *Brontes dubius* and *B. debilis*, the former from around Philadelphia, the other from English Creek, N. J., September 11th, thus proving that both are northern species. Other interesting forms were spoken of, including *Conotrachelus leucophœus*, new to the New Jersey district, and *Tachygonus spinipes*, taken on September 23d.

Mr. Hardenberg asked regarding the relationship of insects to Fungi.

Messrs. Wenzel, Hardenberg and Bland believed that the same beetles do not live on more than one species of fungus.

Mr. Daecke exhibited the imago and supposed larva of *Ptinx appendiculatus*, from Da Costa, N. J. The larva was beaten from a tree and had been kept alive for fourteen months, being fed with caterpillars. He also exhibited the remains of a mass of unmounted mosquitoes which had been destroyed by a moth larva.

Prof. Smith stated that he had bred *Culex dupreei* from larva taken in two different localities in New Jersey. The larva remains at the bottom of water, its gills being supplied with trachea. Also *Culex squamiger*, a Californian species, had been captured at Westville, and near New Brunswick, N. J.

WILLIAM J. FOX, *Secretary.*

EXCHANGES.

Not Exceeding Three Lines Free to Subscribers.

☞ These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest in) are discontinued.

Desirable Lepidoptera for exchange. Would like to receive lists of good species.—John Comstock, 1572 Ridge Ave., Evanston, Ill.

I wish to exchange American and European Lepidoptera and Coleoptera for American insects for the season of 1903. I am also a preparator of larvæ.—Karl Haertel, 198 California St., Newton Mass.

Coleoptera.—Paleoxenus Dohrnii Horn exchanged for Elaterids and Buprestids of the U. S. not yet represented in my cabinet.—A. Fenyes, M.D., Pasadena, Cal.

I have Beetles, Butterflies, Moths, Catocalæ, spread or in papers, from Illinois, to exchange for U. S. and exotics, or pupæ and cocoons.—A. Mares, 1671 W. 23rd St., Chicago, Ill.

American Coleoptera desired.—Will give Hungarian species in exchange.—Th. Gobyelmann, Jutegyar, Ujpest, near Budapest, Hungaria.

Exchange.—Would like to exchange Coleoptera from Austria for N. American. Correspondence German and French.—Otto Spicack, K. K. Postbeamtor, Sternberg, Mähren, Austria

Rare Sphingidæ and Catocalæ wanted for cash or exchange.—Geo. J. Keller, 26 Monmouth St., Newark, N. J.

Will exchange California specimens, *Attacus ceanothi* cocoons, etc., for flies caught in other places that also inhabit California.—J. E. Cottle, 1020 Pacific Ave., San Francisco, Cal.

Wanted eggs of *Argynnis diana*.—I. Ruston, 10 Carlton Road, Workshop, Nottinghamshire, England.

Wanted.—Lepidopterists desiring *Bembecia marginata* and var. *albicoma*, to send exchange lists of North American moths.—Henry Engel, Genl. Delivery, Pittsburg, Pa.

I have a few specimens of *C. calleta* and *cinctus* to exchange for rare *sphinx* or pupæ of same.—W. T. Buxton, 153 Walnut St., Somerville, Mass.

Wanted for cash fertile eggs of *A. luna*, *S. angulifera*, *H. io*, *E. imperialis*, *C. regalis*, also of all kinds Sphingids.—Ernst Jeheber, 118 N. Reservoir Street, Lancaster, Pa.

Wanted.—Complete files, with indexes, of American Entomologist and its successor, the American Entomologist and Botanist; also of Insect Life.—Chas. S. Davis, No. 1910 Fifth St. N. W., Washington, D. C.

Wanted.—Cocoons of *A. luna*, *S. cynthia*, *Att promethea*, *Att. Gloveri*, *Att. cecropia*, *Hyper Io*, and *Eacles imperialis*. Will pay cash for a few of each.—Dr. Tillotson, 744 Clinton ave., Rochester, N. Y.

Gortynas wanted.—Good prices or exchange will be given for fine specimens of *albilunata*, *erepta*, *u-album*, *juvenilis*, *medialis*, *senilislatia*, *cerina*, *speciosissima*, *verona*, *frigida*, *unimoda*, *angelica*, *insulidens*, *furcata*, *sauzælitæ*, *buffaloensis*.—H. H. Lyman, 384 St. Paul St., Montreal.

Wanted.—Perfect colored sketches of American caterpillars (larger Sphinges and night-flies), also broken specimens of exotic macros. Correspondence solicited.—C. V. Blackburn, 101 Pine St., Woburn, Mass.

North American Lepidoptera for exchange.—Also live cocoons and pupæ, Catocalas preferred.—Herman J. Erb, 536 Blum Place, Union Hill, N. J.

Lepidoptera of all kinds wanted for exchange of other specimens. Send list to Chas. Krueger, 1161 N. Lincoln St., Chicago, Ill.

Cicindelidæ wanted.—Cash or exchange for other insects.—Charles Stevenson, 906 St. Urbain St , Montreal, Canada.

Lepidoptera wanted.—*Chrysophanus hypophleas* and vars., from all parts of North America. Also *Arg. atlantis* and *electa*, and many common Noctuidæ, including *Cosmia paleacea*.—E. H. Woolley Dod, Millarsville, Alberta, N. W. T., Canada.

Lepidoptera.—I have 200 *cecropia*, 100 *polyphemus* and 400 *cynthia* cocoons to exchange for other North American Lepidotpera.—Ferdinand Goeben, 464 Atlantic Ave., Brooklyn, N. Y.

Lep'doptera.—For exchange, fertile eggs of *Hemileuca maia*—Alfred C. Sampson, Sharon, Mass.

Wanted.—Tortricids and Micro-Lepidoptera, especially from the West. Will pay cash and furnish pins, mailing boxes and full instructions.—W. D. Kearfott, 114 Liberty St., New York, N. Y.

Coleoptera of France exchanged for American species.—J. Perret, Place St. Maurice, 3 Vienne, Isere, France.

Illinois, Lake Superior, Texas and Californian Dytiscidæ wanted in exchange for Dytiscidæ and other Coleoptera.—John D Sherman, Jr., 390 Halsey St., Brooklyn, N. Y. City.

Wanted —In exchange or for cash various species and varieties of the genus *Eubaphe* (*Crocota*). Other Lepidoptera also desired, especially mounted specimens. Send lists to A. Kwiat, 701 Larrabee St., Chicago, Ill.

Polistes.—I wish to correspond with entomologists all over the country who are willing to aid me in the study of this genus.—S. Arthur Johnson, Fort Collins, Colo

Wanted.—Bulletin Brooklyn Entomological Society, vol. i, No. 10, or the complete volume —Wm. J. Fox, care of NEWS.

Will exchange North American Lepidoptera for native, Exotic or European species. Send lists to Jos. H. Reading, 775 North Rockwell Street, Chicago, Illinois

A full line of Arizona Coleoptera. Apply to agent, Mr. Chas. Palm, 172 East 64th Street, New York; Dr. R. E. Kunzé, Phœnix, Arizona, U. S A.

Moths of Pennsylvania and New Jersey. The undersigned will give good exchange in cash or specimens for moths of Pennsylvania and New Jersey that are new to his collection. Send list of rare species only. Philip Laurent, 31 East Mt. Airy Ave., Philadelphia, Pa.

Native pupae for exchange, including *regalis, ceanothi, luna, calleta.* Native pupæ desired. W. T. Buxton, 17 Walter Street, Somerville, Massachusetts.

Wanted in exchange for foreign Insects Butterflies from North America in papers, and for cash Butterflies and large Moths from Central and South America in papers.—W. Neuburger, Lepidopterist, Halensee bei Berlin, Luetzenstrasse 10, Germany.

Lepidoptera. I have a few *luna* cocoons to exchange for *ceanothi* or pupæ of *Papilios* not found in this locality.—Miss Kate W. Strong, Setauket, Long Island, New York.

I have a few live pupæ of *Deidamia inscriptum* to exchange. I wish live pupæ of *Darapsa versicolor* and *Calasymbolus astylus*.—R. R. Rowley, Louisiana, Mo.

Megachilidae of the Americas wanted for study: Will exchange or purchase.—E. S. G. Titus, Div. Entom. Dept. Agric., Washington, D. C.

Wanted.—Copies of ENT NEWS for January, 1903, Vol. xiv, No. 1.—Henry Skinner, 1900 Race St., Philadelphia, Penna

ORTHOPTERA WANTED.

Persons willing to collect or exchange Orthoptera of the world would kindly inform

MR. MORGAN HEBARD, Chestnut Hill, Phila., Pa.

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